



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/717,129	11/22/2000	Katsuhiko Suga	1344.1048/JDH	2847

21171 7590 03/11/2004

STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER

TRAN, DZUNG D

ART UNIT	PAPER NUMBER
----------	--------------

2633

6

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/717,129

Applicant(s)

SUGA ET AL.

Examiner

Dzung D Tran

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on amendment filed on 12/18/2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Specification***

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In the newly added claim 5, the limitation "a second input port having second periodic filter characteristics, to receive the multiplexed odd wavelength optical signals" is not described in the specification. It is possible that "the multiplexed odd wavelength optical signals" should be "the multiplexed even wavelength optical signals".

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergano U.S. patent no. 6,134,033 in view of Tai et al. U.S. patent no. 6,341,040.

Regarding claims 1, 4 and 5, Bergano discloses a method and apparatus for multiplexing a plurality of optical signals having different wavelengths (figure 3), comprising:

first optical multiplexing means (figure 3, element 307) for multiplexing, among a plurality of optical signals that are input with directions of linear polarization of neighboring wavelengths being differed to each other and are successively given wavelength numbers depending upon the wavelengths, optical signals corresponding to odd wavelength numbers, while maintaining their polarization states (col. 3, lines 6-33);

second optical multiplexing means (figure 3, element 308) for multiplexing optical signals corresponding to even wavelength numbers among said plurality of optical signals, while maintaining their polarization states (col. 3, lines 6-33); and

a polarization combiner (same as third optical multiplexer) (figure 3, element 315) for multiplexing a output of first optical multiplexing means (311) (i.e. a group of odd numbered wavelengths) and a output of second optical multiplexing means (313) (a group of even numbered wavelengths).

Bergano differs from claims 1 and 4 of the present invention in that Bergano does not specific discloses the a polarization combiner (same as third optical multiplexing) comprises an interleaver including two input ports and one output port and having periodic filter characteristics for each of said input ports. Tai discloses that it is well known to use an interleaver (figures 6, 9, element 600, 930) including two input ports

and one output port and having periodic filter characteristics for each of said input ports (col. 5, lines 15-30, col. 6, lines 23-55). Combining two signals with filtering means provides a signal with less noise (crosstalk). Since the interleaver is well known in the art for periodic selectively multiplex the predetermined group of channels into a multiple optical signal, it would have been obvious to an artisan at the time of the invention was made to utilize the interleaver with periodic taught by Tai in the polarization combiner in the system of Bergano. One of ordinary skill in the art would have been motivated to do this in order to reduce the channel crossing interference signal or crosstalk due to narrow spacing between the channels in the high speed, large capacity optical communication system.

Regarding claim 2, Bergano further discloses a plurality of optical signals are input with directions of linear polarization of neighboring wavelengths being orthogonal to each other (col. 4, lines 36-40).

Regarding claim 3, Bergano further discloses the third optical multiplexing means is provided with a function for maintaining the polarization state (col. 4, lines 33-48).

5. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung Tran whose telephone number is (703) 305-0932.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jason Chan, can be reached on (703) 305-4729.


The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Application/Control Number: 09/717,129

Page 6

Art Unit: 2633

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

  
LESLIE PASCAL  
PRIMARY EXAMINER